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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,697	11/26/2001	Takahiro Yasaki	Q67414	3925

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EXAMINER	
PATHAK, SUDHANSHU C	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/991,697	YASAKI, TAKAHIRO	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *November 26th, 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 7* is/are rejected.

7)☒ Claim(s) *4,6 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *November 26th, 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-to-8 are pending in the application.

Specification

2. The disclosure is objected to because of the following:

   The Specification of Page 5, line 25, referring to Fig. 2 discloses a "controller 12", this element is not disclosed in the Figure.

   Appropriate correction is required.

Information Disclosure Statement

3. The information disclosure statement filed April 25th, 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the applicant fails to provide an English translation of the foreign patents listed. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

   Appropriate correction is required.

Claim Objections

4. Claims 1 & 3 are objected to because of the following informalities:

The claims refer to a receiver to include a plurality of correlators, however the disclosure refers to the path searcher (for a spread spectrum receiver), which includes a number of correlators (Abstract, line 1).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Leibowitz (4,660,164) in further view of Kohli et al. (5,901,171).

Regarding to Claim 1, The Applicant Admitted Prior Art (AAPA) discloses a spread spectrum receiver for receiving a spread spectrum signal containing a scrambled synchronization code (Specification, Page 1, lines 12-18). The AAPA further discloses a receiver to further include a searcher to determine the individual path delays by taking the correlation between the received signal and the replica of the of the scrambled sync code wherein the correlation values of the individual communications paths represent their delay characteristics and are obtained on a chip-by-chip basis (Specification,

Page 1, lines 15-21). However, the AAPA does not disclose the searcher to include a plurality of correlators to determine a correlation value between the received spread spectrum signal and the replica at a rate higher rate than a chip rate of the spread spectrum signal.

Leibowitz discloses a digital correlator device for use in a spread spectrum communication system for code synchronization / detection (Column 1, lines 5-15). Leibowitz further discloses the device includes a plurality of digital correlators, correlating the received data against a reference signal by successively shifting the replica with respect to the received signal, configured to operate in parallel with their operations overlapping in time (Abstract, lines 1-5 & Column 1, lines 32-68 & Column 2, lines 54-68 & Column 3, lines 1-5 & Fig.'s 1-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Leibowitz teaches implementing a digital correlator comprising a plurality of correlators and this can be implemented in the searcher in the spread spectrum receiver to correlate the received signal with the replica of scrambled synchronization code so as to provide a reliable, highly integrated circuit and with increased operating speed correlator so as to accurately determine the individual path delays. However, the AAPA in view of Leibowitz does not specify the correlation rate to be at a rate higher rate than a chip rate of the spread spectrum signal.

Kohli discloses correlations performed at a rate higher than a chip rate of the spread spectrum signal (Abstract, lines 25-29 & Column 12, lines 15-22 &

Column 18, lines 17-19 & Column 27, lines 15-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Kohli teaches correlating the input data with a reference data at a higher rate than the incoming data and this can be implemented in each of the parallel correlators as described in the AAPA in view of Leibowitz so as to accurately and reliably detect the scrambling code received, thus satisfying the limitations of the claims.

7. Claims 2, 3, 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Leibowitz (4,660,164) in further view of Kohli et al. (5,901,171) in further view of Flockencier (5,511,015).

Regarding to Claims 2, 3, 5 & 7, The AAPA in view of Leibowitz in further view of Kohli discloses a spread spectrum receiver comprising a searcher further comprising a plurality of correlators performing a correlation operation between the received signal and a replica at a higher rate than the chip rate of the spread spectrum signal as described above. The AAPA also discloses the technique of Diversity combining wherein the receiver comprises a plurality of antennas to achieve antenna diversity gain (Specification, Page 1, 12-15). However, the AAPA in view of Leibowitz in further view of Kohli does not disclose each of the correlators comprises a multiplier for multiplying the received spread spectrum signal and the replica, an adder for summing an output signal of the multiplier with a previous value, and a memory for storing an output signal of the adder as an intermediate result of a correlation value

and supplying the stored signal to said adder as said previous value until the correlation value is obtained.

Flockencier discloses a correlator for performing the correlation operation correlators comprises a multiplier for multiplying the received spread spectrum signal and the replica (Column 1, lines 30-65 & Column 2, lines 1-46 & Fig. 13 & Claim 1), an adder for summing an output signal of the multiplier with a previous value (Column 1, lines 30-65 & Column 2, lines 1-46 & Fig. 13 & Claim 1), and a memory for storing an output signal of the adder as an intermediate result of a correlation value (Fig. 8-10 & Column 4, lines 1-10 & Column 7, lines 60-67 & Column 8, lines 4-20 & Claim 1) and supplying the stored signal to said adder as said previous value until the correlation value is obtained (Fig. 8-10 & Column 4, lines 1-10, 30-45 & Column 7, lines 60-67 & Column 8, lines 4-20 & Claim 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Flockencier teaches a correlator performing the correlation operation comprising a multiplier for multiplying the received spread spectrum signal and the replica, an adder for summing an output signal of the multiplier with a previous value, and a memory for storing an output signal of the adder as an intermediate result of a correlation value and supplying the stored signal to said adder as said previous value until the correlation value is obtained and this method of performing the correlation operation can be implemented in each of the parallel correlators as described in the AAPA in view of Leibowitz so as to perform the correlation by minimizing the components and power

consumption for performing the operations. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention even though the AAPA does not explicitly discloses the receiver comprising a plurality of antennas for receiving the spread spectrum signal it does disclose diversity combining wherein the signals from different communication paths (also antennas) are combined so as to achieve diversity gain.

Allowable Subject Matter

8. Claims 4, 6 & 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, it is recommended to the applicant to amend all the claims so as to be patentable over the cited prior art of record. A detailed list of pertinent references is included with this Office Action (See Attached "Notice of References Cited" (PTO-892)).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

    - If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)-272-3056

- The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak

2634

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